We claim:

1. A method of operating a discharge lamp system in which vertical segregation of vapor phase species is reduced, the method comprising the steps of modulating lamp power with an arc-straightening frequency and with a frequency that excites a combination radial plus longitudinal acoustic mode of the lamp.

2. The method of claim 1, wherein the arc-straightening frequency is provided in spaced apart time periods and the excitation of the combination radial plus longitudinal acoustic mode occurs between the arc-straightening frequency time periods.

3. The method of claim 1, wherein the excitation of the combination radial plus longitudinal acoustic mode is provided at the same time as the arc-straightening frequency.

4. The method of claim 1, wherein the combination radial plus longitudinal mode is a combination of a first radial mode and an nth longitudinal mode.

5. The method of claim 4, wherein "n" is one of 2, 4, and 6.

6. The method of claim 1, wherein the combination radial plus longitudinal mode is excited with a single power frequency.

7. The method of claim 1, wherein the combination radial plus longitudinal mode is excited with a swept power frequency range.

8. The method of claim 7, wherein the swept power frequency range includes a combination of a first radial mode and an nth longitudinal mode and is within a power frequency band about 1 kHz wide.

9. The method of claim 8, wherein the power frequency band is within the range of one of 179-182 kHz and 188-190 kHz.

10. The method of claim 1, wherein the arc-straightening frequency is in a power frequency band about 15 kHz wide that includes a frequency that excites a second azimuthal mode of the lamp.

11. The method of claim 10, wherein the power frequency band is within a range of 130-150 kHz.

12. The method of claim 2, wherein each time period of the arc-straightening frequency is 2 to 16 times longer than a subsequent modulation at the combination radial plus longitudinal mode of the lamp.

13. A discharge lamp system with reduced vertical segregation of vapor phase species, comprising a first generator that modulates lamp power with an arc-straightening frequency and a second generator that modulates lamp power at a combination radial plus longitudinal acoustic mode of the lamp.

14. The lamp system of claim 13, further comprising a circuit with a first multiplier providing a signal from said first generator, a second multiplier providing a signal from said second generator, an adder for combining signals from said first and second multipliers, and a controller for providing a non-zero multiple to only one of said first and second multipliers at a time.

15. The lamp system of claim 14, wherein said controller provides the non-zero multiple to said first generator during separate arc-straightening frequency periods that are 2 to 16 times longer than interleaved time periods when said second multiplier receives the non-zero multiple during modulation at the combination radial plus longitudinal mode of the lamp.

16. The lamp system of claim 13, wherein said second generator provides a signal that modulates lamp power at a combination of a first radial mode and an nth longitudinal mode.

17. The lamp system of claim 16, wherein "n" is one of 2, 4, and 6.

18. The lamp system of claim 13, wherein said second generator outputs a single frequency.

19. The lamp system of claim 13, wherein said second generator outputs a swept frequency range.

20. The lamp system of claim 19, wherein the swept frequency range excites a combination of a first radial mode and an nth longitudinal mode.

21. The lamp system of claim 13, wherein said first generator provides a range of frequencies that includes a second azimuthal mode of the lamp.